

Urban planning, policymaking and scenarios of land uses' design

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José G. Vargas-Hernández

<<https://orcid.org/0000-0003-0938-4197>>

University of Guadalajara / Zapopan [México]

ABSTRACT

This paper is aimed to analyze the implications between urban planning, policymaking and scenarios of land uses' design. The analysis assume that urban planning and design contribute to the quality of a city's land uses and landscapes that are related to factors that improve qualitatively urban areas and the upgrading neglected areas. It begins analyzing the urban design and planning and its relationships with the urban land uses, policymaking and strategies to resume in design scenarios. It is concluded that urban planning, policymaking and design of land uses are relevant activities to manage urban land resources to achieve sustainable urban development.

KEYWORDS

Design. Land uses. Policy making. Scenarios. Urban planning.

1. Introduction

Urban metropolitan areas are engaging in initiatives aimed at upgrading urban infrastructure development, services and land uses to create better economic efficiency, social inclusion and justice, environmental sustainability, besides improving the competitiveness and attractiveness of urban settlements (de Jong et al. 2015). Urban planning for economic development target land uses for vulnerable populations who survive the city's decline being creative in solutions (Clement, 2013; Williams, 2013).

Urban land uses management should aim to achieve efficient and sustainable use of urban land resources recognizing the limitations and problems and formulating urban livelihood strategies for the creation of opportunities and benefits through productive use of urban open and green spaces in cities (Drescher, 2005). Urban planning, policymaking and design are sustained on assumptions and premises such as savings of urban management land spaces, natural resources, water and urban cost reductions are essential factors to transform the urban landscapes, improving the urban living environments moving towards a more sustainable patterns of city development (Howe and Wheeler, 1999, p. 15; Smit and Nasr 1992, p. 152).

Local governments maintain control and make decisions based on urban planning, policymaking and design to support and strengthen the involvement and responsibility of citizens to grant access to land use for diversified activities in such a way that urban planning policies promote the under-performing communities to have similar land uses configurations and similar infrastructure.

2. Urban design and planning

Urban land is a scarce natural and real-estate resource which can be used in a more sustainable manner. Urban planning faces many challenges for the use of scarce land in inner cities and around cities (Drescher, 2005). Urban land has become already increasingly scarce due to population growth and demand for housing, infrastructure and other uses, leading to decreasing availability (Fischer, Hizsnyik, Prieler and Wiberg, 2011). Different land uses in inner city and peri-urban areas of urban regions and communities create significant disproportionate environmental impacts that affect global and local sustainability (Grimm et al., 2008, 2000; Seto et al., 2012).

Urban planning and zoning management for land uses implementation processes involve all the stakeholders such as land owners, land lords, land developers, land planning, engineering consultants, real estate's business, investors, who may share the financial risks and benefits from knowledge and experience exchanges. Access to land use, improvement of waste management technology and urban planning policies favoring urban agro ecological production could be possible to restore natural resources, amend the ecological rift, rescale local production and feed the urban population.

Total land use planning can use a landscape typology to form green productive innovation along with ecological innovation communities through the urban settlements designated the different land uses for agro ecology food production. The provision of land use as a resource to support urban food production is not a statutory obligation of local or regional authorities and may be unlikely that planning policies may support community green areas. Urban development planning combined with proper designing of land uses into productive green grid in local agro ecology could develop a landscape offering opportunities to feed people and provide recreation and leisure (Viljoen, Bohn and Howe 2005).

Access to land use is relevant in a context of space scarcity, urban green projects in the inner city may be available by activating and maintaining unused land spaces. Community land use plans should integrate urban green projects on the basis of temporary spaces for negotiation of existing demands following short term, opportunistic demands and less formalized planning practices following low-cost strategies to reactivate and maintain the use of land spaces. Some local authorities are unlikely to protect green space preservation if this reduces the net buildable land in economic terms.

Landscape based on little formal local urban planning of the land use for development of housing and industrial buildings represents a challenging opportunity for urban environment regeneration (Phillips (ed.), 1993) which leads to improve the property yields of local real estate market. Design of urban landscapes based on urban land uses for a wide range of functions is a real challenge for urban sustainable planning based on the synergies of specific spaces and their contexts and focusing on positive benefits and externalities.

Urban planning supports various functions for land uses such as housing, commercial and industrial activities, economic revitalization, production, biodiversity, energy conservation, waste management, microclimate control, human health, community socialization, leisure, tourism, education, cultural heritage, etc. Urban planning supporting the function of production requires a supporting strategy to provide safe and accessible land use.

Sustainability objectives are putting pressures upon urban planning local authorities, to take into consideration the urban land available for initiatives and opportunities to promote, physical, ecological, socio-cultural and economic sustainability. The land uses inventory leads to policy development applied to public, communal and private land owners to support planning and policymaking to be taken into consideration when making decisions, either land uses or other parallel policies. Urban governments have to promulgate proactive decisions to keep land spaces active and to regenerate non-functioning and deflating urban properties.

A growing number of urban developments and initiatives include in their plans different uses of land and soil, such as edible landscaping, community gardens, farmer markets, as the result of the growing public awareness of residents, community groups and other stakeholders in a range of urban planning priorities.

Urban agriculture activities may be the result of land use for landscapes that are strongly production-oriented, often enhancing and supporting the cultural, social and ecological functions. Temporary land use for new forms of green innovation areas can merge the environmental and social aims of the different stakeholders and users. Innovation land use types should target community planning for inclusion of vulnerable population (Clement 2013). Diversification of income and urban food are sources of innovation of technological strategy for land uses and water efficiency (Smit & Bailkey 2006).

Land use planning and zoning is lagging behind a far-reaching vision of urban agro ecology presented in the form of inertia to overcome considering that there are better uses of land and recognizing that agro ecological activities must play a limited the urban environment. To meet challenges of urban and peri-urban land uses, urban planning creates land use combinations and configurations such as urban agro ecology. Unused urban land is being converted into sites for urban agro ecology projects to meet some community economic, social and environmental issues and food problems. Land use for food production is an issue to be considered in a sustainable planning context of metropolitan areas based on dispersed land throughout the peri-urban and urban areas in response to the demand of consumers.

Unlocking the potential of the city's land uses requires sustainable planning techniques and innovative approaches for zoning the land assets, target infrastructures investments and better utilization of land. Urban sustainable planning should consider the function of the use of land in restoring urban natural environment to meet the needs of the community sustainable development as well as the community involvement in innovation in land scape design of urban green areas and public spaces in community gardening. Land uses management is being characterized as collaborative public space for public-private partnership negotiation processes supported by civic participation.

Land uses compositions can be analyzed by multi-scale analysis to find the potential for agro ecology production, as relevant data useful for the formulation and implementation of urban land use planning and policymaking regarding the looming food crisis and the urban sustainability. The land uses composition of an urban community may be the adequate urban space to produce healthy food to meet the demand to support its population density. Land use simulations with different production capabilities can be used to determine a fixed vegetable demand target (Martellozzo et al. 2014).

Land use planning integrates urban agriculture, agro ecology and sustainability into planning and policymaking processes. Agro ecological food is a relevant issue to urban planners (Argenti, 2000; Koc, MacRae, Mougeot, & Welsh, 1999; Mendes, 2006; 2007; Mougeot, 2006; Pothukuchi & Kaufman, 1999; 2000; Rocha, 2001; Wekerle, 2004). Land use planning and design are integrated components to urban agro ecological practices to contribute to more productive, sustainable and inclusive cities. Urban agro ecology practices are included in land uses of urban planning and development regulated by local authorities (Cabannes, 2002).

Urban agro ecology is a transitional land use to make it more productive from the city planning, building and real estate market standpoints. Land use and comprehensive planning in specific zoning codes to integrate innovations in urban food policies aimed to develop multi-functional building to include urban

agro ecology. Urban agro ecology is a protective counter movement attempting to mitigate social rift through de-commodifying land, food and labor. Urban agro ecology emerges as a counter-movement in response to the alienation from biophysical environment and labor resulting from commodification of urban land and labor, economic and food crisis.

The land-use planning system fills the middle layer vacuum of sustainable development and urban food production by providing the land availability and use despite that this is not a statutory land-use requirement. Local authorities may be more committed to pursuing sustainable development through the integration of a land-use planning systems. Urban land-use planning and development provides gaps and contradictions to sustainable development policy inherent to issues such as urban food growing.

Vacant urban land in cities is increasing in city centers where the land use densities are declining due to manufacturing activities declines after have been reached their limits on employment creation and population density. The purpose of local governments regarding the land uses is to support the decision making on urban sustainable commitments as a public resource. Local governments have undertaken land uses inventories to further innovative land uses system and urban agro ecological agendas.

Land for urban development uses in high density urban areas may be under pressure to find opportunities for new land available from brown-field developments to accommodate the growing household needs within urban areas. Urban land use rules and policies may negatively affect local urban food production and distribution. Small-scale subsistence urban food production in empty spaces of urban land and the informal food economy have limited the expansion of formal markets (Guyer 1987).

The public land use inventory is used to identify potential opportunities and initiatives on public owned land and integrate the different urban activities into planning and policymaking processes to enhance environmental sustainability. Inventory land uses data should be accessible to residents, farmers, community groups, real estate investors, business, educators, and anyone interested in using the lands. The public lands and quasi-public properties identified and included by the inventory and owned by local government may respond to potential uses to determine site suitability for development and access to natural resources (Burkholder, Ng, Nui, & Solanki, 2007).

Land use inventories are used to identify the potentialities for different activities integrated into urban planning and policy making to advance economic, social and environmental dimensions in more sustainable communities. Urban vacant land uses formation may be caused from annexation in cities where population is growing in population, although some other cities are not growing in land but the population is not declining. The increase of urban vacant land available is caused by annexation, suburbanization and disinvestment processes pressing local and city governments to manage the required urban planning actions and policies.

Local authorities can develop an inventory of all urban land uses to determine their suitability for different functions and uses, such as urban green areas, community gardens, housing, industrial parks, and other uses. Land use inventory increase institutional and political support for urban development and planning aligned with public involvements through participatory mechanisms to achieve sustainable goals.

The development project team of the land use inventory of any city should be supported by a GIS staff with management control of public-owned land (Balmer et al., 2005). An inventory management plan should include ideas for all the possible land use proposals, which not only should be projected and piloted but also tested to run and operate efficiently in urban areas. The implementation of land use inventories to integrate sustainable activities and initiatives into planning and policymaking processes. As a tool, land use inventory function is used in conjunction with other tools and processes applicable in any context but recognizing local conditions.

The land uses inventory built upon a sustainability agenda supporting the link between urban green areas, urban agro ecology and other broad sustainability goals such as social planning, eco density, green building, etc. Land devoted to be used in high-density residential housing implies less space available for other uses such as urban agro ecology. However, the land uses inventory processes has limited links and the social dimensions and public participation.

A land uses inventory offers opportunities, benefits and challenges which include all the public and private

lands (Balmer et al., 2005). Land uses inventories enable integration of urban agro ecology into urban planning, development, and policy making processes, encompassing both social and environmental dimensions, which in turn advance the local government sustainability agendas. Grassroots initiatives on land uses play a valuable role in shaping and designing public policy on ecological and environmental sustainable protection on meeting community needs.

New tools are required for urban sustainable planning and policymaking, to assess regional and local trends and comprehensively evaluate urban land uses regarding the urban ecosystems management. Socio ecological relationships and conditions between urban land uses and urban ecosystems lead to the development of spatial patterns across the urban landscapes. Inefficient use of urban land may be the result of the incompatibility with activities that cannot command and adequate urban sustainable planning.

Urban planning and design provide the tools and methods for tapping the under-utilized land uses and promote participatory models for sustainable urban agro ecology integrated into the urban topography. Participatory land use planning and design regulated by local governments should reconcile demands of urban growth related with urban agro ecology activities to achieve high economic, social and ecological value.

To reconcile the demands posed by urban land use planning and design and their relationships with urban growth and urban agro ecology activities regulated by local authorities to achieve economic, social and environmental values. The land-use planning system is one method used by local authorities to council, protect, promote and facilitate allotment provision and taking advantage of resources and realize the assets. Local government land use planning system requires to set urban growth limits and boundary controls of suburbia (McCall, 1973). Land use planning system can support identification of specific spaces to collect, divert, diversify, transport and consume organic wastes away from landfills to urban agriculture.

Land-use planning systems play an important role in policy-making functions to coordinate efforts towards urban sustainable development. Urban sustainability within land-use planning reinforces the development and maintenance of data base on features associated with shrinkage, decline, wasted or rundown resources (Carley, 1995; Curwell and Cooper, 1998). Cities like Detroit is undergoing widespread urban decay after the decline of the auto industry, which require creative and responsive actions about managing the urban policy favoring new land uses of abandoned urban land caused by out-migration to the sprawl areas (Gopakumar and Hess, 2005; Gallagher, 2008).

Urban land availability for different uses is the common reason for local authorities to become involved in different urban planning initiatives. Urban green areas and gardening initiatives and projects in urban planning and zoning can be designated as a spatial land uses for small scale practices depending access to land of urban density, land availability and real estate development. Urban green spaces can be land meaningfully used and created through landscape design and ecological restoration.

Urban green areas integrated in the urban landscape as the result of a planning strategy aims to increase urban density (Quincerot & Weil, 2009, p. 17). Land used for landscape design can incorporate some features to maximize the urban locations, such as agricultural, ecological restoration, lake shore, environmental culture, woodland landscapes, etc. Urban green spaces and gardening initiatives can change forms and influence urban landscapes supported by urban planning and zoning procedures. Urban land policies, land regulations, competition for land, urban land market and prices are relevant variables that have an impact on urban food security system, poverty, ecology and health.

Urban land use for farming requires planning and implementation processes involving landlords, planning specialists, investors, financing and marketing institutions, research and science organizations, etc. Urbanization process is connected to the disappearance of urban land and still expanding into farm land taken over for large-scale commercial farming. Urban land-use for commercial farming based on zoning requires permission processes and building regulations. However, urban planners and local politicians does not encourage agro ecology to be cultivated in urban vacant land (Hough, 1984).

3. Urban land uses, policymaking and strategies

Urban land use policies and regulations are deemed as methods for increasing and decreasing urban land vacancies. An analysis of federal state and local land use laws and regulations is a relevant conditions required by the regional and local context where these legal norms are applied taking into consideration the

opportunities and challenges for using public or private land for the different projects, such as the urban agriculture projects. For example, paved land for use in producing container-grown native plants.

The existing multi-functional urban land uses should be determined in an urban site planning and policymaking to agree on the formulation and implementation of strategies and procedures. An inventory of land uses identifies sites on public, communal and private land to enable planning and policymaking in urban integration and social and ecological sustainability involving public participation. A comprehensive inventory of urban land uses supports the analysis, design, formulation and implementation of urban land use policy. Policymaking and practices on structural factors influence the development of urban agro ecology as an element of urban land use and landscape.

Some inventories of urban land use may enable integration in urban planning and policy making of different activities in the scope of public involvement, such as the urban agro ecology and economic, social and ecological sustainability. Edible landscaping is integrated to land use for urban agriculture and agro ecology. Urban agriculture should be integrated into land uses inventory as the tool to support planning and policymaking that helps the community and their authorities to identify available land. Land use inventories enable integration of urban agriculture and agro ecological activities into planning and policymaking processes aimed to enhance local participatory social and environmental agendas.

However, there is a growing connection between the land use for urban agro ecological landscapes and the economic, social and environmental benefits of a globalized economy that sustain urban residents. Following the recommendations of Agenda 21, local and city governments should adopt innovative sustainable planning strategies and policies, community-based land uses, to address social and environmental issues, protection and conservation of urban natural resources and biodiversity. Land-use planning strategies involve the community in effective use of urban vacant land for agro ecological activities and effective food production.

Approaches to urban land-use planning can give more priority, design and operate adequate urban space to give priority to agro ecological food production as aesthetical activity. Land use regulations and the built environment are two relevant interconnected conditions that urban planning must consider for sustainable development policies and any urban food system. Urban agro ecology uses land as an economic opportunity for residents to ruralize subsistence urban green spaces and garden landscapes (Moore 2006, p. 175) as a primary interim land use with potential impact in the urban agro food system and on urban landscape.

Land availability is a relevant concern to the planning policy and land-use designation. Urban development planning policy tends to favor population density on urban land for residential use inside of what is considered within the boundaries of the urban growth area. Land for residential use values have increased due to an increasing housing demand (Nelson, Pendall, Dawkins, & Knaap, 2002) which has made available land to developers and real estate agencies as well as economic developer's advocates.

The lack of availability of land is a significant obstacle for land uses such as urban agro ecology. Urban planning and development authorities should review and analyze the land uses policies to remove the zoning barriers for some specific uses of land and soil, such as the urban agroecology. Planning policies and development of urban food production policies need to widen their perspectives to include factors connected by considerations of land-use planning and sustainable development.

Increase of urban vacant land leads to an abundance of suitable type of land uses for green fields and green open spaces and other uses aimed to strengthen the development policies and economy growth. Urban areas with similar amounts of vacant land may lead to different set of policies and actions for specific local solutions, such as management of urban vacant with land high or low rates of structural abandonment and location and the design, formulation and implementation of urban policies.

Urban vacant land is strongly related to city economic growth policies used most for green spaces and agro ecological lands. Strategies promoted for growing urban economies and in migration are related to decreasing in the use of urban vacant spaces for practices such as agricultural land availability, lots and parcels without clear function, brownfield and derelict open space.

Ultimately, at the policy level, new forms of value are ascribed to public and private urban land property in order to join other urban land use priorities such as housing, commercial areas, urban green areas and open spaces, roads and other infrastructure. The urban agro ecology practices are an opportunity for residents of

cities to use and reuse public land property of local governments, land banks, community and economic development agencies, practitioners of urban agro ecology, developers, city residents, etc.

4. Design scenarios

Many urban residents do not value the use of land for urban agro ecology. Participatory landscape design process is based on inputs from consensus of land users, landscape architects, local governments and other stakeholders involved in the design, management and financing with the aim to use and value its contributions (Romero et al, 2004, Pesci, 2000).

The principles of community gardening can be linked to landscape design for the garden incorporated into green natural areas. A community garden includes urban agro ecological activities pursued by individuals and communities on public land, collectively managed and owned.

Multiple land uses can be determined through scenarios to simulate urban changes according to the land use composition. Planning scenarios can be used to determine the available land use for urban agro ecology and vegetable production. Urban landscape design scenarios associate physical land uses, biological processes and social economic dynamics articulating social, political and institutional conditions (Fernandez, 1999).

Land use composition and natural resources availability may create the capacity to implement urban agro ecology and produce fresh vegetables and healthy food to sustain the increasing population density in urban areas. Multiple urban land use scenarios are a tool that helps to allocate vacant urban spaces to vegetable production including residential green areas, gardens, rooftops, etc. Land use control and building regulations constraint and limit farming and gardening in urban areas.

Management and design of vacant land uses contributes ecologically to sustainable cities by creating webs of sustainable urban spaces to provide ecosystem services. Access to nutritious, healthy and affordable foods, lifestyles and ecosystem services are increasingly important across urban land uses and landscapes to create opportunities for urban green spaces, gardening and foraging (Walker, Keane, Burke, 2010; Comstock, Dickinson, Marshall, Soobader, Turbin, Buchenau, Litt, 2010; McLain, Hurley, Emery, Poe, 2014). Long-term vacancy requires more oriented regeneration policies (National Land Use Database, 2000). Vacant buildings require recording reliable and comprehensive information.

Previous and current characteristics of land uses types of sites should be assessed to design other possible forms of multifunction and components including physical dimensions and surface areas for agro ecology production, education, leisure, recreation, meeting area for social interactions. Communities have needs of different land uses, components, aspirations and potential conflicts for future developments in the spatial design of site plans. Landscape designers, environmentalist and community garden practitioners can give spatial attention to urban land uses involving the urban communities.

Due to the high land values in some urban contexts, securing land space to be used for urban green areas and growing food is quite a challenge. A productive urban green areas structure supported by the design of open land spaces uses for multifunctional agro ecology can be developed considering garden parks, productive open green areas and squares used for other integrated functions and small scale activities such as recreation, leisure, social interactions, education, culture, etc. Urban agro ecology has the potential for urban planners and designers to live up land use for multifunctional and sustainable activities across different fields.

Urban farming, agriculture and gardening offer a new frontier for sustainable land use planners and sustainable landscape designers to become involved in the urban sustainable development and transformation of urban spaces. The external frontier of urban land is the periphery and the internal frontier is composed of unused spaces within the inner city arising from land depopulated uses migrating and urbanizing the peri-urban.

Multifunctional land use can be represented by zero farming that combines different functions such as urban food production to meet the needs of urban food in scarce urban land (Deelstra, Boyd, and van den Biggelaar, 2001). The use of land density as a parkland for physical activities is positively correlated but negatively with obesity (West et al. 2012).

A participatory design process to elaborate a site plan, must be based on the existing multi-functional land uses to be fully implemented in urban areas aimed to improve the socio-economic development and the environmental sustainability. Participatory landscape design should take into account the availability of natural

resources and land uses appropriation and transformation modalities, private, public and community organizations as well as local communities and neighborhoods. Urban landscape design is a social appropriation process of ownership and identity between the land uses and communities (European Council of Towns Planners, 2002).

5. Conclusion

Urban planning of land uses and landscape design must work with urban communities following their dynamics to ensure participatory processes. Contemporary ecological movements must be involved in sustainable land uses and demonstrate the principles on community design, planning and functioning aimed to nurture economic, social and ecological relationships between building the landscapes, communities and people that heal and empower nature and reconstructing cultural history.

Some urban settlements report greater prevalence of vacant unused land, brownfield lands and derelict open spaces than others cities that have undersupply of vacant lands to manage. This reassessment strategy may complement the goals of socio economic development and environmental sustainability. Urban planning and design based on the security of urban land use is required to provide and improve urban infrastructure, enhance technical and management capacities of production in different sectorial activities, in the inner and peri-urban environments.

Peri-urban areas of land can be planned to be saved and used for the development of recreational agro ecology, combining nature, sustainable production, landscape conservation, recreational, cultural heritage preservation and eco educational services. Land can be redeveloped into urban areas where the potential space for such a diverse use as residential development is being limited Urban land uses should contribute to build urban landscapes aimed to heal, connect and empower these relationships with each other and with the nature.

Urban planning, policymaking and design of large areas of available land are not the only necessary components for the different functions of land uses, such as urban food production. Land use components, dimensions and locations must be on a map of the area to arrive at decisions on the site circulation plans for the area to be used by urban planners and landscape.

A land use planning system should advocate protection for green open spaces in the urban growth area boundaries. The inventory of land uses could be managed by local governments in order to determine the potential for urban green areas and other urban agro ecological uses. Urban agricultural landscapes are often considered by land use planners as spaces for opportunities to integrate farmland into urban environmental development with new production functions. A mixed-use of urban landscape may be developed by urban food production ventures mixed within residential and commercial neighborhoods providing economic growth with employment opportunities and creating capacities with sustainable development imperatives.

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